TO: Students of School of Physical Sciences and School of High Energy Accelerator Science

<u>Transitional Arrangements for</u> <u>Discontinuing "Course-by-Course Education Program"</u>

This is to inform the students regarding the special transitional arrangements for discontinuing "Course by Course Education Program to Cultivate Research in Physical Science" at the end of the AY 2022 due to the curriculum restructuring for the AY 2023.

1. Students who enrolled in 2022

For the student who enrolled in the SOKENDAI in 2022, the credits earned by the following subjects, which are offered by the Committee of "2022 Course by Course Education Program to Cultivate Research in Physical Science," can be counted for the required credits for completion of the 3-year and 5-year courses.

Subject Name	Credits	Semester	School of Physical Sciences	School of High Energy Accelerator Science
Special Study on Physics I	1	1 st Semester, 2 nd Semester	0	0
Special Study on Physics II	1	1 st Semester, 2 nd Semester	0	0
Special Study on Physics III	1	1 st Semester, 2 nd Semester	0	×
Seminar on Advanced Physical Science Research	4	Full Year (1 st Semester - 2 nd Semester) Full Year (2 nd Semester - 1 st Semester)	0	0
Exercise on Advanced Physical Science Research	4	Full Year (1 st Semester - 2 nd Semester) Full Year (2 nd Semester - 1 st Semester)	0	0
Special Program of Big Project Research	2	Full Year (1 st Semester - 2 nd Semester) Full Year (2 nd Semester - 1 st Semester)	0	×
Exercise on Project Research	4	Full Year (1 st Semester - 2 nd Semester) Full Year (2 nd Semester - 1 st Semester)	0	×
Seminar on Research and Development	2	Full Year (1 st Semester - 2 nd Semester) Full Year (2 nd Semester - 1 st Semester)	0	×
Exercise of Research and Development	4	Full Year (1 st Semester - 2 nd Semester) Full Year (2 nd Semester - 1 st Semester)	0	×

2. Students enrolled by the AY 2021

The students enrolled by the AY 2021 can register the courses in "Course by Course Education Program to Cultivate Research in Physical Science." In order to complete the course, the students need to fulfil the requirements and also receive the approval from the committee. The requirements for completion of the courses for the AY 2022 are the same as the previous years, while the requirements of completion for 2023 and after are as below:

2-1. Students enrolled in the Five-Year Doctoral Program

In order to complete the courses, the students must meet the requirements of the course he/she selected in addition to meet the requirements of each department listed below. Please note that the students who already earned the credits from the subject in the current curriculum must not take the subjects in the new curriculum which are equivalent to the subject you already took, that are shown in the same row in the table below.

> Department of Structural Molecular Science and

> Department of Functional Molecular Science

Current Curriculum (- AY2022)		New Curriculum (2023 -)	
Subject Name	Credit	Subject Name	Credit
Special Study on Physics I	1	(discontinued)	-
Special Study on Physics II	1	(discontinued)	-
Special Study on Physics III	1	(discontinued)	-
Training of Presentation in English	1	Training of Presentation in English	1
Introduction to Biomolecular Simulation	1	Introduction to Biomolecular Simulation	1
Fundamental Photo-science	2	Fundamental Photo-science	2
Fundamental Chemistry and Physics of Solids	2	Fundamental Chemistry and Physics of Solids	2
Fundamentals of Biomolecular Science	2	Fundamentals of Biomolecular Science	2
Introduction to Coordination Chemistry	2	Introduction to Coordination Chemistry	2

Three or more credits are required from the subjects listed below:

Department of Astronomical Science

Three or more credits are required from the subjects listed below:

Current Curriculum (- AY2022)		New Curriculum (2023 -)	
Subject Name	Credit	Subject Name	Credit
Special Study on Physics I	1	(discontinued)	-
Special Study on Physics II	1	(discontinued)	-
Special Study on Physics III	1	(discontinued)	-
Introduction to Observational Astronomy I	2	Introduction to Observational Astronomy 1	2
Introduction to Observational Astronomy II	2	Introduction to Observational Astronomy 2	2
Introduction to Theoretical Astronomy	2	Introduction to Theoretical Astronomy	2
Training of Presentation in English	1	Training of Presentation in English	1

Department of Fusion Science

Three or more credits are required from the subjects listed below:

Current Curriculum (- AY2022)		New Curriculum (2023 -)	
Subject Name	Credit	Subject Name	Credit
Special Study on Physics I	1	(discontinued)	-
Special Study on Physics II	1	(discontinued)	-
Special Study on Physics III	1	(discontinued)	-
Basic Exercise on Physics and Engineering I	2	Basic Exercise on Physics and Engineering 1	2
Basic Exercise on physics and Engineering II	2	Basic Exercise on physics and Engineering 2	2
Basic Exercise on physics and Engineering III	2	Basic Exercise on physics and Engineering 3	2

Department of Space and Astronautical Science Three or more credits are required from the subjects listed below:

Current Curriculum (- AY2022)		New Curriculum (2023 -)	
Subject Name	Credit	Subject Name	Credit
Special Study on Physics I	1	(discontinued)	-
Special Study on Physics II	1	(discontinued)	-
Special Study on Physics III	1	(discontinued)	-
Introduction to Observational Astronomy I	2	Introduction to Observational Astronomy 1	2
Introduction to Observational Astronomy II	2	Introduction to Observational Astronomy 2	2
Introduction to Theoretical Astronomy	2	Introduction to Theoretical Astronomy	2
Space Science	2	Space Science	2
Space Engineering	2	Space Engineering	2
Fundamentals of Fusion Science	2	Fundamentals of Fusion Science	2
Basic digital circuit design and	1	Basic digital circuit design and	1
development for measurement and		development for measurement and	
control systems		control systems	
Introduction to Project Management	1	Introduction to Project Management	1
Space and Astronautical Science	1	Space and Astronautical Science	1
Overview of Control Engineering	1	(discontinued)	-
Overview of Signal Processing	1	(discontinued)	-
Training of Presentation in English	1	Training of Presentation in English	1
Introduction to Biomolecular	1	Biomolecular Simulation	1
Simulation			
Fundamental Physical Chemistry I	2	Fundamental Physical Chemistry 1	2
Fundamental Physical Chemistry II	2	Fundamental Physical Chemistry 2	2
Fundamental Photo-science	2	Fundamental Photo-science	2
Fundamental Chemistry and Physics	2	Fundamental Chemistry and Physics	2
of Solids		of Solids	
Fundamentals of Biomolecular Science	2	Fundamentals of Biomolecular Science	2
Introduction to Coordination Chemistry	2	Introduction to Coordination Chemistry	2
Measurement and Control Technology for	2	Measurement and Control Technology for	2
Experimental Physics		Experimental Physics	
Fundamentals of Spectroscopy	1	(discontinued)	-

> Department of Accelerator Science,

> Department of Materials Structure Science and

Department of Particle and Nuclear Physics

Two or more credits are required from the subjects listed below:

Current Curriculum (- AY2022)		New Curriculum (2023 -)		
Subject Name	Credit	Subject Name	Credit	
Special Study on Physics I	1	(discontinued)	-	
Special Study on Physics II	1	(discontinued)	-	
High Energy Accelerator Seminar I	1	High Energy Accelerator Seminar 1	2	
High Energy Accelerator Seminar II	2	High Energy Accelerator Seminar 2	2	
High Energy Accelerator Seminar III	1	(discontinued)	-	
High Energy Accelerator Seminar IV	1	(discontinued)	-	
High Energy Accelerator Seminar VII	2	(discontinued)	-	
High Energy Accelerator Seminar VIII	2	(discontinued)	-	
Introduction to Accelerators I	2	Introduction to Accelerators 1	2	
Introduction to Accelerators II	2	Introduction to Accelerators 2	2	
Seminar on Introduction to Accelerators I	2	Seminar on Introduction to Accelerators 1	2	
Seminar on Introduction to Accelerators II	2	Seminar on Introduction to Accelerators 2	2	
Introduction to Experimental		(discontinued)		
Methods Using Accelerators	2	(-	
Radiation Physics	2	Radiation Physics	2	
Beam Physics I	2		_	
Beam Physics II	2	Beam Physics ¹	2	
Applied Mathematics	2	(discontinued)	-	
		Fundamentals of electromagnetism for		
Electromagnetism	2	particle accelerators	2	
Analytical Dynamics	2	Analytical Dynamics ²	2	
Electrodynamics and Special Relativity	2		2	
Quantum Mechanics	2	(discontinued)	-	
Thermodynamics/Statistical Mechanics	2	Superconducting Technology and Cryogenics Engineering ³	2	
Modern Physical Chemistry	2	(discontinued)	-	
Introduction to the Condensed	_	Introduction to the Condensed	-	
Matter Physics	2	Matter Physics	2	
Introduction to Biology	2	Introduction to Biology	2	
Modern Quantum Mechanics	2	(discontinued)	-	
Measurement and Control Technology for	2	Measurement and Control Technology for	2	
Experimental Physics	2	Experimental Physics	2	
Basis and Application of Synchrotron	1	Basis and Application of Synchrotron	1	
Radiation		Radiation		
Particle Accelerator and Detector	1	(discontinued)	-	
Soft Condensed Matter Physics	2	(discontinued)	-	
Introduction to Symmetry and Space Group	2	Introduction to Symmetry and Space Group	2	
Basic of Signal Processing for Sensors	1	Basic of Signal Processing for Sensors	1	
Introduction to Data Science	1	Introduction to Data Science	1	
Control of Distributed Devices for Large	1	Control of Distributed Devices for Large	1	
Systems		Systems		
Practicum for Accelerator Science using the	4	Practicum for Accelerator Science using the		
Laucation-oriented Electron Linear		Education-oriented Electron Linear		
Accelerator		Accelerator		
Auvanced Digital Circuit Design and	1	Auvaliced Digital Circuit Design and	1	
Control Systems		Control Systems	[⊥]	
Control systems		Control Systems		

^{1, 2 and 3} Please refer to the comparative table of the current and the new curricula, as there are a certain condition applies to take the subjects: https://www.soken.ac.jp/en/education/curriculum/course/

2-2. Students enrolled in the Three-Year Doctoral Program

Please fulfil the following requirement to complete the courses below:

2-3. Requirements for the courses

Advanced Research Course

Please fulfill one of the requirements, either (a) or (b) below:

(a) Following two subjects in the table below are required.

Current Curriculum (- AY2022)		New Curriculum (2023 -)	
Subject Name	Credit	Subject Name	Credit
Seminar on Advanced Physical Science	4	(discontinued)	-
Research			
Exercise on Advanced Physical Science	4	(discontinued)	-
Research			

(b) Two subjects from the subjects listed in the table below are required.

Current Curriculum (- AY2022)		New Curriculum (2023 -)	
Subject Name	Credit	Subject Name	Credit
Exercise on Structural Molecular Science IV	4		
Exercise on Functional Molecular Science IV	4		
Fusion Plasma Science Exercise IV A	2		
Space Science Colloquium IV	4		
Special Research for Accelerator Science IV A	2	Discortation Work in Advanced Studies IV A	
Special Seminar for Materials Structure	4	Dissertation work in Advanced Studies IV A	2
Science IV			
Special Study for Theoretical Particle and	4		
Nuclear Physics II			
Exercise for Particle and Nuclear Physics IV	4		
(newly offered)	-	International Internship	1

Project Research Course

Please fulfill one of the requirements, either (a) or (b) below:

(a) Following two subjects in the table below are required.

Current Curriculum (- AY2022)		New Curriculum (2023 -)	
Subject Name	Credit	Subject Name	Credit
Special Program of Big Project Research	2	(discontinued)	-
Exercise on Project Research	4	(discontinued)	-

(b) Two subjects from the subjects listed in the table below are required.

Current Curriculum (- AY2022)		New Curriculum (2023 -)	
Subject Name	Credit	Subject Name	Credit
Exercise on Structural Molecular Science II	4	Seminar on Molecular Science II B	2
Exercise on Functional Molecular Science II	4		
Introduction to Project Management*	1	Introduction to Project Management*	1
Space Engineering*	2	Space Engineering*	2
Space Systems Engineering I	2	Space Systems Engineering I	2
Field works	2	Field works	2

* Taking "Introduction to Project Management" and "Space Engineering" does not meet both requirements for the department and the course for the students enrolled in the Five-Year Doctoral Program majoring in the Space and Astronautical Science.

Development Research Course

Please fulfill one of the requirements, either (a) or (b) below: (a) Following two subjects in the table below are required.

(a) Following two subjects in the table below are required.						
Current Curriculum (- AY2022)		New Curriculum (2023 -)				
Subject Name	Credit	Subject Name	Credit			
Seminar on Research and Development	2	(discontinued)	-			
Exercise on Research and Development	4	(discontinued)	-			

(b) Two subjects from the subjects listed in the table below are required.

Current Curriculum (- AY2022)		New Curriculum (2023 -)		
Subject Name	Credit	Subject Name	Credit	
Exercise on Structural Molecular Science V	4	Cominar on Malagular Science V/D		
Exercise on Functional Molecular Science V	4	Seminar on Molecular Science V B	Z	
Space Science Colloquium V	4	Space Science Colloquium V B	2	